

PATENT  
Docket No. 290.0033 0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): HO et al. ) Group Art Unit: 1652  
                        )  
Serial No.: 09/180,340 ) Examiner: Hope A. Robinson  
Confirmation No.: 6674 )  
                        )  
Filed: August 20, 1999 )  
                        )  
For: STABLE RECOMBINANT YEASTS FOR FERMENTING XYLOSE  
      TO ETHANOL

**AMENDMENT AND RESPONSE**

Commissioner for Patents  
**Mail Stop AF**  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Decision on Appeal decided August 28, 2008, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on the page entitled "Amendments to the Claims."

Remarks begin on the page entitled "Remarks."

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**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-16. Canceled

17. (Currently Amended) A method of integrating multiple copies of exogenous DNA into reiterated chromosomal DNA of cells, comprising:

(a) transforming the cells with a replicative and integrative plasmid comprising an autonomous replicating sequence, exogenous DNA, and a first selection marker; and

(b) repeatedly replicating the cells from step (a) to produce a number of generations of progeny cells while selecting for cells which include the selection marker, promoting the retention of the replicative and integrative plasmid in subsequent generations of the progeny cells and produce progeny cells having multiple integrated copies of the exogenous DNA, and wherein the method further includes the step of repeatedly replicating the progeny cells from step (b) to produce a number of generations of progeny cells in the absence of selection for cells which include the selection marker, so as to promote the loss of the plasmid in subsequent generations of progeny cells and recovering yeast cells each containing multiple copies of the exogenous DNA integrated into its chromosomal DNA, and The method of claim 16 wherein the cells are yeast cells and the exogenous DNA includes genes encoding xylose reductase, xylitol dehydrogenase, and xylulokinase, which also serve as the first selection marker.

18-28. Canceled

29. (Previously Presented) A plasmid vector comprising a functional yeast autonomous replicating sequence and exogenous DNA including genes encoding xylose reductase, xylitol

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dehydrogenase, and xylulokinase flanked on each end by a DNA flanking sequence which is homologous to a reiterated DNA sequence of a target yeast cell, the plasmid vector for use in integrating the exogenous DNA sequence into chromosomal DNA of the target yeast to form stable integrants which ferment xylose to ethanol.

35. (New) The method of claim 17, wherein the plasmid also includes a second selection marker for selecting cells which include the plasmid.

**Remarks**

The rejection of claims 17 and 29 was reversed by the Board. Claim 17 has been amended to recite the subject matter of independent claim 14 and intervening claim 16. Support for new claim 35 may be found at, for instance, originally filed claim 15.

The Examiner is thanked for the courtesies extended to the undersigned during the telephone conferences of September 9 and 10, 2008. The undersigned also appreciates the proposed draft claim language. Claim 17 has been amended as proposed by the Examiner with one exception. Language in the proposed claim has been changed to refer to yeast cells.

**Amendment**

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**Summary**

It is respectfully submitted that claims 17, 29, and 35 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives at the telephone number listed below if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted  
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Date

Oct 17, 2008

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**CERTIFICATE UNDER 37 CFR §1.8:**

The undersigned hereby certifies that this paper is being transmitted via the U.S. Patent and Trademark Office electronic filing system in accordance with 37 CFR §1.6(a)(4) to the Patent and Trademark Office addressed to the Commissioner for Patents, Mail Stop AF, P.O. Box 1450, Alexandria, VA 22313-1450, on this 17 day of October, 2008.

By: Sandy Truehart  
Name: SANDY TRUEHART

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